

**ENVIRONMENTAL ASSESSMENT
FOR THE CONSTRUCTION OF

THE ORDNANCE MUNITIONS AND ELECTRONIC
MAINTENANCE SCHOOL (OMEMS)
TECHNICAL ESCORT TRAINING FACILITY (TETF)

AT

REDSTONE ARSENAL, ALABAMA**



**U.S. ARMY GARRISON – REDSTONE
April 2004**

April 2004

**FINDING OF NO SIGNIFICANT IMPACT (FNSI)
ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF THE
ORDNANCE MUNITIONS AND ELECTRONIC MAINTENANCE SCHOOL
(OMEMS)
TECHNICAL ESCORT TRAINING FACILITY (TETF)
AT REDSTONE ARSENAL, ALABAMA**

BACKGROUND

This Environmental Assessment (EA) addresses the potential environmental impacts associated with the Proposed Action to construct a Technical Escort Training Facility (TETF) for training conducted by the U.S. Army Ordnance Munitions and Electronic Maintenance School (OMEMS) at Redstone Arsenal, Alabama. This facility will provide training to U.S. military, Department of Defense (DoD) civilians, and international students involving field sampling, detection, identification, limited decontamination, and mitigation/remediation of hazards associated with chemical, biological, and radiological materials and Weapons of Mass Destruction (WMD).

**DESCRIPTION OF ALTERNATIVES CONSIDERED
FOR THE PROPOSED ACTION**

Alternative 1 (Preferred Alternative) – New Facility Construction: Alternative 1 includes the construction of a new TETF consisting of one 19,100 square foot academic building with three classroom/laboratory combinations, three dress-out rooms, personnel workspace, hygiene areas, break area, storage areas, and an attached 10,800 square foot covered hardstand area to support outdoor training during inclement weather. A gravel roadway will connect the rear of the proposed training facility to the adjacent training area allowing students and instructors direct access for class demonstrations and practical exercises. Supporting facilities include utilities, electric service, paved walks, curbs, gutters, security fencing and lighting, storm drainage, information systems, and general site improvement. The proposed construction site is at the corner of Kingfisher Road and Cajun Drive, across Cajun Drive from Building 3534.

Alternative 2 (No-Action Alternative): Under Alternative 2 the Army would not construct a new TETF. Current facilities include one older (1975) Installation Status Report condition coded RED metal building and one new metal building. These buildings will meet the immediate training increases up to a maximum of 480 students a year, but will not meet the anticipated training requirements beyond FY 08. Under the No Action Alternative, if the construction project were not completed, the ability to perform adequate technical escort training would be impaired. Military readiness and the availability of technical experts in the chemical mediation/WMD field would be hampered without this capability.

Environmental Effects. Eleven broad environmental components or resources were considered to provide a context for understanding the potential effects of the Proposed

Action and to provide a basis for assessing the significance of potential impacts. The areas of environmental consideration are air quality, biological resources, cultural resources, hazardous materials and waste, health and safety, infrastructure and transportation, land use, noise, geology and soils, socioeconomics, and water resources. Cumulative impacts of the Proposed Action were also analyzed.

Minimization measures are not required for land use and socioeconomics as no, or slightly positive, impacts were identified for the alternatives considered for these resources. Impacts to the other environmental resources examined were determined to be not significant, and anticipated impacts are mitigable. No significant cumulative impacts were identified under the alternatives.

CONCLUSION

The Directorate of Environment and Safety (DES) has prepared an EA that addresses the Proposed Action and evaluates the environmental impacts of the alternatives considered. Based on the EA for the Construction of the OMEMS TETF at Redstone Arsenal, Alabama, April 2004, no significant environmental impacts that would require the preparation of an Environmental Impact Statement would be associated with this project.

**DEPARTMENT OF THE ARMY
UNITED STATES ARMY GARRISON
REDSTONE ARSENAL, ALABAMA**

**FINDING OF NO SIGNIFICANT IMPACT (FNSI)
FOR THE CONSTRUCTION OF THE
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TECHNICAL ESCORT TRAINING FACILITY (TETF)
AT REDSTONE ARSENAL, ALABAMA**

PREPARED MARCH 22, 2004

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LIST OF ACRONYMS AND ABBREVIATIONS

ADEM Alabama Department of Environmental Management	NEPA National Environmental Policy Act
ALNHP Alabama Natural Heritage Program	NESHAP National Emissions Standards for Hazardous Air Pollutants
AMCOM Army Aviation and Missile Command	NPDES National Pollutant Discharge Elimination System
AMCR Army Materiel Command Regulation	NRHP National Register of Historic Places
AR Army Regulation	NWI National Wetland Inventory
BMPs Best Management Practices	OMEMS Ordnance Munitions and Electronic Maintenance School
CAA Clean Air Act	OSHA Occupational Safety and Health Administration
CEQ Council on Environmental Quality	PM-2.5 Particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act	PM-10 Particulate matter with an aerodynamic diameter less than or equal to 10 microns
CFR Code of Federal Regulations	RCRA Resource Conservation and Recovery Act
CWA Clean Water Act	ROI Region of Influence
CWC Chemical Warfare Center	RSA Redstone Arsenal
CWS Chemical Warfare Service	SARA Superfund Amendments and Reauthorization Act
dBA A-weighted Decibels	SMDR Structure and Manning Decision Review
DEM Directorate of Environmental Management	SWDF Solid Waste Disposal Facility
DES Directorate of Environment and Safety	TETF Technical Escort Training Facility
DoD Department of Defense	TEU Technical Escort Unit
DOT Department of Transportation	TVA Tennessee Valley Authority
EA Environmental Assessment	WMD Weapons of Mass Destruction
EPA Environmental Protection Agency	USACE United States Army Corps of Engineers
FNSI Finding of No Significant Impact	USDA United States Department of Agriculture
HAZMATS Hazardous Materials	USFWS United States Fish and Wildlife Service
ICUZ Installation Compatible Use Zone	
ISR Installation Status Report	
kV kilovolt	
Ldn Day-night average sound level	
MGD Million Gallons per Day	
MSA Metropolitan Statistical Area	
msl mean sea level	
MVA Megavolt Ampere	
NAAQS National Ambient Air Quality Standards	

INTRODUCTION

The National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), Department of Defense (DoD) Directive 4715.9, *Environmental Planning and Analysis* (U.S. Department of Defense, 1996), and 32 CFR Part 651, Army Regulation (AR) 200-2, *Environmental Analysis of Army Actions* (Department of the Army, 2002), which implements these laws and regulations, direct DoD and Army officials to consider environmental consequences when authorizing or approving Federal actions. Accordingly, this Environmental Assessment (EA) analyzes the potential environmental impacts associated with the construction of a Technical Escort Training Facility (TETF) for the Ordnance Munitions and Electronics Maintenance School (OMEMS) at Redstone Arsenal (RSA), Alabama.

THE PROPOSED ACTION

Purpose

The Proposed Action is to provide a permanent long-term facility that, with the existing facilities, will meet the capacity requirements anticipated for technical escort training. The building will be used as a training environment only. No hazardous waste will be generated. Only inert items will be used, and no explosive training will be conducted. In essence, training conducted will consist of hands-on training of a non-hazardous nature.

Need

The need for technical experts in the chemical mediation/Weapons of Mass Destruction (WMD) field has increased steadily. Expanding requirements for the increasing and sustaining National Guard WMD-Civil Support Teams activated to support Homeland Defense, as well as adding new courses not documented in the Structure and Manning Decision Review (SMDR), will cause the student load to exceed 500 per year. Current facilities will not accommodate the anticipated training load beyond Fiscal Year (FY) 2008. The Proposed Action will allow for improved training of critically needed Army, Marine, DoD civilians and Army National Guard personnel to enable them to perform worldwide, no-notice missions involving field sampling, detection, identification, limited decontamination, and mitigation/remediation of hazards associated with chemical, biological, and radiological materials and WMD.

THE PROPOSED ACTION AND AN ALTERNATIVE

Two Alternatives were considered: Alternative 1 (Preferred Alternative) construction of a new training facility and Alternative 2 (the No-Action Alternative), a no change option.

Alternative 1 (Preferred Alternative)—Construction of New Facility

The Preferred Alternative includes the construction of a new TETF consisting of one 19,100 square foot academic building with three classroom/laboratory combinations, three dress-out rooms, personnel workspace, hygiene areas, break area, storage areas, and an attached 10,800 square foot covered hardstand area to support outdoor training during inclement weather. A gravel roadway will connect the rear of the proposed training facility to the adjacent training

area, allowing students and instructors direct access for class demonstrations and practical exercises. Supporting facilities include utilities, electric service, paved walks, curbs and gutters, security fencing and lighting, storm drainage, and communications.

Location



Figure 1. The building footprint.

The Proposed TETF area is not expected to exceed 3 acres. The Proposed Action location is a previously disturbed 7.5 acre lot at the corner of Cajun Drive and Kingfisher Road, across from Building 3534 (Figure 1). The lot is bounded on all sides by paved roads. It is within the former WWII Huntsville Arsenal Plant Area # 3 Smoke Filling Plant/Incendiary Bomb Filling Plant area. The hardstand will be within the gray area. Figure 2, on the following page, shows an overview of the location and surrounding environment on Redstone Arsenal.

Alternative 2 (No-Action Alternative)

The No-Action Alternative will require the Army to continue to use existing facilities. These include one older (1975) metal building and one new metal building that together will meet the immediate training needs up to a maximum capacity of 480 students a year. Installation Status Report (ISR) rates the older metal building as coded RED. Defined by Army standards, a Code Red rating signifies the facility does not meet the unit needs or Army standards due to major functional deficiencies which can significantly impair mission performance. Furthermore, the two current facilities will not accommodate the anticipated training load beyond FY 08.

Under the No-Action Alternative, the Army will not construct a new training facility. There will be no construction or changes in existing mission operations, thus, there will be no environmental impacts, but mission effectiveness will not be accomplished.

The No-Action Alternative (Alternative 2) will have a negative impact on Mission effectiveness:

- Over the last three years, the need for technical experts in the chemical mediation/WMD field has increased steadily.
- The current facilities will not accommodate the anticipated training load beyond FY 08.
- The current facilities include an ISR condition coded RED building, signifying major functional deficiencies that could significantly impair mission performance.
- Ultimately, without well-trained and highly competent technical experts on the ground, battlefield readiness could be seriously degraded.
- These inefficiencies will result in a negative impact on mission effectiveness

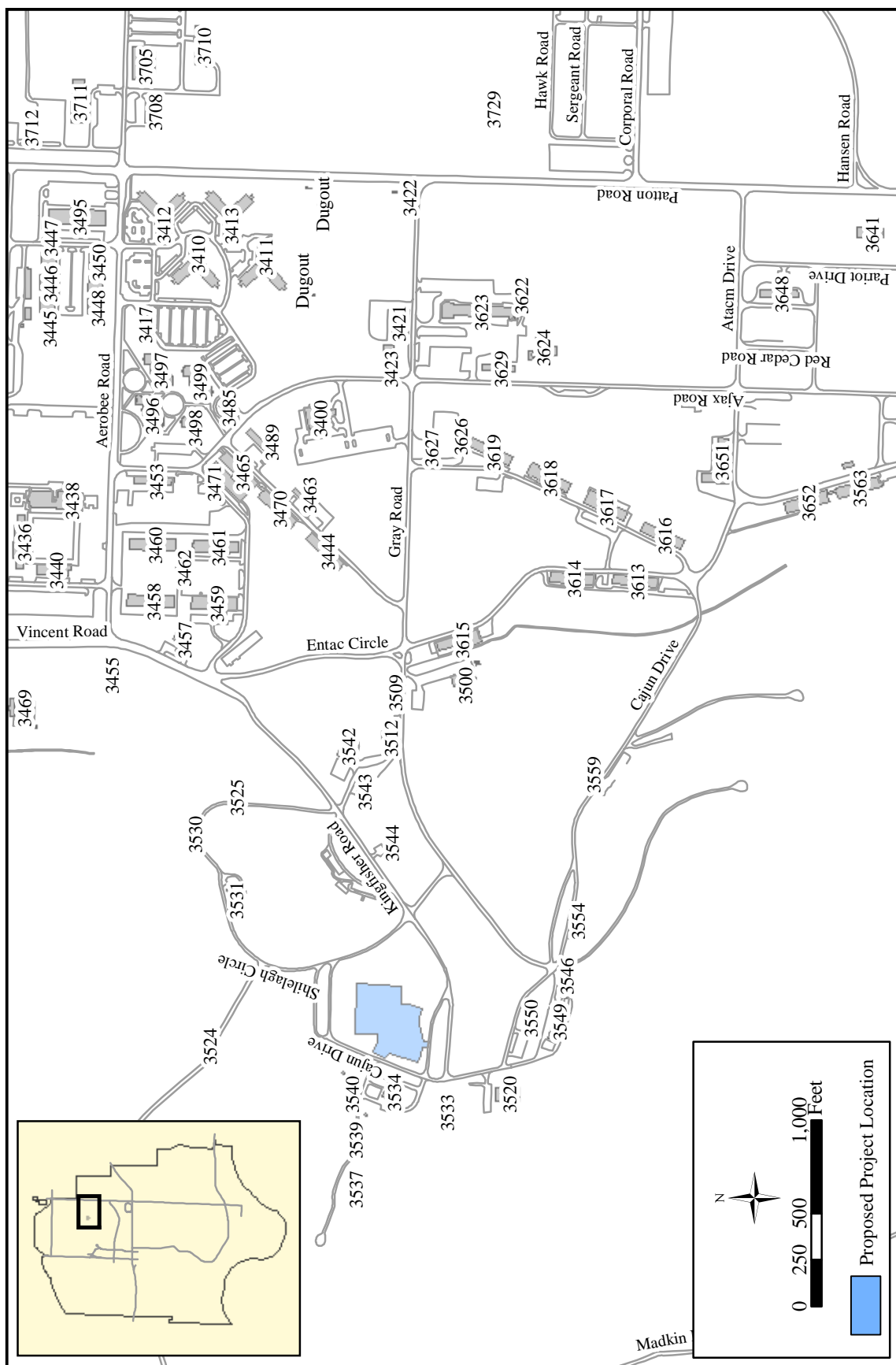


Figure 2. Proposed Location for Technical Escort Training Facility

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The areas of environmental consideration were air quality, biological resources, cultural resources, hazardous materials and waste, health and safety, infrastructure and transportation, land use, noise, geology and soils, socioeconomics, and water resources.

The assessment of potential environmental impacts and the determination of their significance are based on the requirements in 40 CFR 1508.27. Impacts are evaluated at three levels: (1) No impact—no impact is predicted; (2) No significant impact—impact is predicted, but the impact does not meet the intensity/context significance criteria for the specific resource; and (3) Significant impact—an impact that meets the intensity/context significance criteria for the specific resource is expected.

Thresholds for determining impact significance are based on the applicable compliance standard. When feasible, these criteria correspond to Federal- or state-recognized criteria and are determined using the associated standardized methods. In the absence of a compliance standard, the thresholds are based upon a Federal- or state-recommended guidance or follow professional standards/best professional judgment. The criteria and associated thresholds, which have been tailored to the environmental conditions at RSA, are presented in Appendix C.

Air Quality

Under the CAA, Federal actions must not cause or contribute to any new violation of air quality standards, increase the frequency or severity of any existing violation, or delay the timely attainment of any air quality standard or interim milestone.

Redstone Arsenal is in Madison County, which has an attainment designation for all primary and secondary pollutant standards stipulated under the NAAQS, based on monitoring by the City of Huntsville Department of Natural Resources. Madison County and the City of Huntsville, along with Limestone County, compose the Huntsville Metropolitan Statistical Area (MSA) (Mims, 2000). The Huntsville MSA and RSA are in attainment for all Federal air quality standards.

The State of Alabama Department of Environmental Management (ADEM) issues air permits for RSA. RSA has a Title V Air Permit (Permit # 7090007) issued July 7, 2003 by ADEM that allows RSA to regulate all emission sources under one permit. The permit does not impose maximum emission limits since there are no major air emission sources on RSA.

Construction-related air quality impacts may result from fugitive dust (particulate matter) and construction equipment emissions. Emissions can be associated with land clearing, drilling and blasting, ground excavation, and cut and fill operations. Fugitive dust and particulate emissions will be generated during construction activities. Dust emissions vary with level of activity, the specific operation, and prevailing meteorological conditions. Combustion emissions will be generated during construction by heavy construction vehicles and equipment and by vehicular traffic during operations of the facility. However, emissions will be below the regulated amounts for clean air standards (Appendix D). Since the Huntsville MSA is an attainment area for all federally regulated pollutants, the proposed construction activities will not have a significant impact on the area air quality.

Contractors will be required to implement and follow construction BMPs and ensure that construction vehicles contain standard vehicle emissions control devices. Fugitive dust from

ground-disturbing activities could be reduced up to 50 percent by regular site-watering practices as necessary. Additional control options for reduction of fugitive emissions from open sources during general construction are presented in Appendix C.

Health and Safety

Health and safety impacts could occur due to construction activities at the site of the Preferred Alternative. Implementation of established safety procedures and Site Specific Health and Safety Plans will minimize potential impacts to health and safety from proposed activities. Governing safety regulations including AMCR 385-100, *Safety Manual*, and all appropriate OSHA regulations including 29 CFR Part 1926, *Safety and Health Regulations for Construction*, will be adhered to during the course of all construction activities. The selected building contractor will comply with all applicable Federal, state, and local laws and regulations.

Biological Resources

The 7.5 acre lot proposed for the Preferred Alternative has been impacted previously by construction and forestry activities. Approximately 2 acres of the site supports grasses and herbaceous weedy species common to disturbed areas; the remaining 5.5 acres is forested. Gravel from an old parking lot is still evident on the west side of the site. The center of the site is a relatively mature cedar stand with individuals ranging from 2 to 14 inches dbh (diameter at breast height). The northern and eastern portions of the site support a commercial timber stand of mature Loblolly pine with individuals approximately 18 inches dbh. The small size of the site, the known disturbance history, and the existing development in the surrounding areas make this site low in biodiversity and of poor quality for wildlife. The area does not support any unique habitats or appreciable wildlife populations. No wetlands or other aquatic habitats are located on the project site. No federal or state protected species have habitats in the proposed project area.

Roughly half of the construction will take place in the southwestern portion of the site where vegetation is minimal. In the remaining areas there is some merchantable timber which will be harvested prior to construction. Any other trees that do not interfere with construction activities and are at least five inches in diameter will be saved and incorporated into the proposed facility design to the maximum extent possible. Construction activities are not expected to contribute to the long-term cumulative impacts on the biological resources of the installation.

Cultural Resources

Historic structures. No standing structures are present in the area of the Preferred Alternative.

Archaeological resources. The area for Proposed Action has undergone Phase I archaeological survey (Alexander et al., 1998) and no archaeological sites were identified. However, the Staff Archaeologist and/or NEPA Coordinator will be notified of the commencement of construction activities so that ground disturbance could be monitored at their discretion. Federal cultural resource preservation statutes mandate that should cultural materials become apparent during construction activities, such materials will be identified and evaluated. Should human remains be encountered, Federal statutes specify that work will cease immediately and the proper authorities be notified (*Federal Register, Rules and Regulations*, Dec. 4, 1995, Vol. 60, No. 232:62161, §10.5). The Alabama Criminal Code (1995 edition, p. 387, §13A-7-23.1) states that

any person who willfully removes or desecrates human remains, including American Indian burials and funerary objects, will be guilty of a Class C felony.

Hazardous Materials and Waste

Several Federal agencies oversee various aspects of hazardous material usage. The DOT regulates the safe packaging and transporting of hazardous materials, as specified in 49 CFR Parts 171 through 180 and Part 397. OSHA regulates the safe use of hazardous materials in the workplace in 29 CFR, primarily Part 1910. EPA regulations are found in 40 CFR. No underground storage tanks, landfills, fuel storage sites, pesticide/herbicide storage areas, or radioactive materials storage are/will be at the Proposed Action site.

Any hazardous materials/waste generated from construction will be identified, removed from the site, and disposed in accordance with current regulations. Construction contractors will have the option of disposing of all construction-related debris on or off RSA. Impacts from hazardous materials and waste from construction activities will not be significant since disposal of all debris and waste will be completed in compliance with current regulations. In addition, no hazardous materials, other than those typically found at construction sites, such as lubricants, coatings, and fuels, will be used during construction activities. Pesticides (herbicides, rodenticides, insecticides, etc.) will be applied in normal lawn care operations, and their use will be subject to approval by the RSA Pest Control Coordinator.

No hazardous materials will be used in or generated from training activities. The training kits that will be used are an inert training version of the real kits. They are designed to result in no hazardous material for disposal. The outdoor training devices use garden hoses and water in simulations that replicate leaking containers. In this simulation, one-half teaspoon of biodegradable cooking oil is also used. Hazardous materials/waste is not generated by training activities.

Transportation

Patton Road is the closest main road to the Proposed Action area. The nearest installation entry is Gate 10, about 1.5 miles north on this four lane-section of Patton Road. Other roads in the vicinity are Kingfisher Road and Cajun Drive. Cajun Drive is a two-lane road that enters the Proposed Action site from Patton Road on the west of the site (see Figure 2, page 3).

No significant infrastructure and transportation impacts are anticipated during construction of the TETF associated with the Preferred Alternative. Interruptions to utility service or the roadway system outside the proposed construction areas will be scheduled in advance. The existing transportation (roadway) system will be adequate to serve the proposed facility. No impacts to infrastructure and transportation from construction activities are anticipated.

Infrastructure

Infrastructure addresses those facilities and systems that provide power, water, wastewater treatment, and the collection and disposal of solid waste.

Electric Power. The Tennessee Valley Authority (TVA) through a number of local distribution companies provides electric service to RSA. Substantial excess capacity is available. The site under consideration for construction was previously utilized and has existing power poles and ready electrical service. There is sufficient power supply to RSA and this area to meet the expected increase in demand from the Preferred Alternative.

Natural Gas. RSA obtains natural gas through Huntsville Utilities at two locations: (1) an uninterruptible supply metered to the family housing areas, and (2) uninterruptible supply metered to the rest of RSA through a station on Patton Road. The natural gas supply is of sufficient capacity to support the proposed new facility should natural gas be required in the future. However, no natural gas is required for the Preferred Alternative.

Water. RSA obtains the majority of its water supply from the Tennessee River. Potable water is supplied from two water treatment plants--Water Treatment Plants No. 1 and No. 3. An additional 1.0 MGD of potable water can be obtained from the City of Huntsville. Water Treatment Plant No. 2 is an auxiliary backup source for industrial water.

Allowing for an average of 50 gallons of water per person per day for approximately 87 personnel and students will result in an average demand of approximately 4,350 gallons per day, or 0.004 MGD. With a treatment capacity of 5.5 MGD and a storage capacity of 2.585 million gallons, the increase will have very little impact on the system.

A 6-inch and a 3-inch cast iron water line are available for use at the proposed site. These lines will provide ample potable water for process, human consumption, and fire protection.

Wastewater Treatment. Wastewater is treated in a centralized plant, owned and operated by Tetra Tech, Inc. (National Pollutant Discharge Elimination System Permit Number AL0000019). Sewer services have a capacity for 9 million gallons per day. At present, the daily use is only 2.9 million gallons. Thus, the system is quite capable of supporting the projected flow of 45 gallons per capita for approximately 87 personnel and students that will result in an average flow of 3,915 gallons per day, or approximately 0.004 MGD.

Solid Waste. RSA operates a 70-acre permitted landfill for the disposal of inert material such as rocks, concrete construction materials, asphalt, and construction debris, including tree stumps and asbestos. The landfill has a permit from ADEM (No. 45-03) that is valid until October 8, 2006.

All household trash and garbage generated on RSA is hauled off post to the Huntsville Solid Waste Disposal Authority Waste-to-Energy Plant adjacent to RSA. The plant is designed to process up to 690 tons of household, industrial, and commercial waste per day. The plant is operating at approximately 87% capacity (Ogden Martin, 2000). The Preferred Alternative site will be added to the refuse collection schedule for solid waste disposal. Since all household trash is hauled off-post, there will be no impact to RSA's landfill.

Land Use

A Real Property Master Plan, Land Use Analysis for Redstone Arsenal was prepared in April of 1999. This plan assists in planning for future growth and development, and promotes compatible and coordinated uses of land. The location of the Preferred Alternative site is identified in the land use plan as a training area. Land use impacts will be positive. The construction of the proposed facility at this site will promote the compatible and coordinated use of the land.

Noise

Noise sources that may occur because of the Proposed Action include construction equipment activities and construction worker vehicle traffic. Typical noise levels of construction equipment range from 70 to 98 dBA at 50 feet (USEPA, 1971). Workers will use hearing protection devices to meet OSHA requirements. Projected noise impacts from construction activities will not be

significant because the noise will not extend to any sensitive receptors. Noise-producing construction activities will be confined to normal working hours to minimize noise impacts.

Redstone Arsenal has developed an Installation Compatible Use Zone (ICUZ) Program to identify noise-generating areas on RSA and to minimize encroachment of noise sensitive activities both on and off RSA. Maps developed in association with the program depict the acceptable, normally acceptable, and unacceptable noise contour zones (Zones I, II, and III, respectively) on and extending off the Installation, based upon the current and projected operations for a typical day. The Proposed Action area is located within Zone 1, an acceptable noise contour zone for the proposed activities. The maximum noise produced during training activities will be that resulting from use of a John Deere tractor. Other noise sources that may occur in this zone will be lawn mowing activities, vehicular traffic on nearby streets, and noise from the nearby rifle and pistol range used for small arms proficiency training and qualification.

Socioeconomics

Redstone Arsenal, as a major employer in Madison County, influences the local economy through direct employment of civilian and military personnel as well as through the local procurement of goods and services. Direct employment by RSA as well as employment directly generated from RSA's procurement expenditures has led to an increase in the level of economic activity and the creation of additional employment opportunities.

A small positive impact to socioeconomics will result from the Preferred Alternative. While no permanent jobs will be created, the proposed construction activities will create some temporary jobs and inject some money into the local economy. Local hotels and restaurants will be used by the trainees. While instruction will be conducted by military personnel, the new facility will require create additional work in routine maintenance for weeds and grass as well as custodial and cleaning services.

Water Resources

Surface Water. The Tennessee River is the southern boundary of RSA. Major watercourses that flow through RSA include Indian Creek, Huntsville Spring Branch, and McDonald Creek. Each of these tributaries flows southward and empties into the Tennessee River. The nearest source of surface water to the area of Proposed Action is McDonald Creek, which runs along the eastern boundary of RSA and drains the northeastern corner of the Arsenal before joining Huntsville Spring Branch.

During construction, erosion control will include use of hay bales and silt fencing to control erosion from the site. All disturbed areas will be revegetated as soon as possible. The contractor will obtain a NPDES storm water construction permit from ADEM and comply with permit requirements, as well as all applicable Federal, state, and local laws and regulations. Run-off from parking lot(s) and roofs could be mitigated by a variety of methods including: retention ponds for the bioremediation of materials in the run-off, installation of pervious materials for the parking lot(s) surfaces, and/or the installation of rain gardens in and around the parking lot(s).

The only expected release of water into the environment by the facility will be that used in attaching a garden hose to training equipment to simulate leaks.

Groundwater. The groundwater in local aquifers moves to lowland areas in the stream basin where it discharges through available openings and provides base flow to the local streams. The primary aquifer in the Proposed Action area is composed of Tusculumbia Limestone. The water is

hard; the average pH of groundwater in Madison County is 7.5 (MICOM, 1994). Groundwater flows generally to the south and can typically be found at an elevation of 580 feet above mean sea level (Geological Survey of Alabama, 1975).

No significant impacts are anticipated to surface or groundwater resources from the proposed construction of the TETF or from training activities, as described above under Surface Water.

Geology and Soils

Tuscumbia Limestone is the underlying geologic formation of the proposed project area and for most of the installation. One characteristic of the formation is the cavities that form by the dissolution of the primary material, which is limestone. These cavities could lead to the formation of depressions and sinkholes. There are numerous caves scattered throughout the installation, but there are no known caves on the proposed project area. The unconsolidated surface material of the formation averages around 40 feet deep, but depth can vary from 20 feet to 80 feet (MICOM 1994). The project area is in the Urban land-Decatur-Emory soil complex (USDA 2002). The parent material of the soils is residuum weathered from limestone with an indistinct alluvium mantle in places. The soil is well drained and no ponding is noted.

Conflicts with Federal, State, or Local Land Use Plans, Policies, and Controls

The Proposed Action will construct the TETF in an area designated for training in the *Real Property Master Plan, Land Use Analysis, Redstone Arsenal, Alabama* (1999), and is consistent with current Installation land use plans. The construction of the proposed facility at this site will promote the compatible and coordinated use of the land. Conflicts with Federal, regional, state, or local land use plans, policies, or controls will not be anticipated.

Energy Requirements and Conservation Potential

Anticipated energy requirements of program activities could be accommodated within the energy supply of the region. Energy requirements will be subject to any established energy conservation practices.

Natural or Depletable Resource Requirements and Conservation Potential

Other than the use of necessary building materials and construction vehicle fuels, no significant use of natural or depletable resources is required by the project.

Irreversible or Irretrievable Commitment of Resources

The amount of building materials and energy required for this program is relatively small. Although the proposed activities will result in some irreversible and irretrievable commitment of resources such as wood, concrete, minerals, and labor, this commitment of resources is not significantly different from that necessary for many other similar building programs. It is similar to the building activities that have been carried out on RSA over recent years. The Natural Resources Irretrievably Committed to loss due to the project are degraded and are not considered to be significant.

Adverse Environmental Effects that Cannot be Avoided

Adverse environmental effects that cannot be avoided include fugitive dust (particulate matter) and construction equipment emissions; noise from construction activities; the disturbance of

soils; and the loss of some natural habitat. However, through implementation of the program actions and mitigations described within this document, these effects can be minimized.

Relationship between Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

The Proposed Action will be undertaken in accordance with the RSA Master Plan EA (U.S. Army Missile Command, 1994) that provides a management tool to aid in making operational support decisions by incorporating the concept of comprehensive planning.

Federal Actions to Address Environmental Justice in Minority and Low-Income Populations

Since this is a military installation and the proposed project is within an area designated for training, no residential communities or businesses are present. Thus, there are no adverse effects to minority or low-income populations.

IMPACT COMPARISON

The following environmental impact matrix presents a summation of Alternative 1, The Preferred Alternative, and Alternative 2, The No Action Alternative.

Environmental Impact Matrix 1

Environmental Components	Alternative 1, The Preferred Alternative	Alternative 2, No Action Alternative
<i>Air Quality</i>	No Significant Impact (short-term-construction-related impacts)	No Impact
<i>Biological Resources</i>	No Significant Impact (short-term construction-related impacts) (some loss of low quality wildlife habitat)	No Impact
<i>Cultural Resources</i>	No Impact	No Impact
<i>Geology and Soils</i>	No Significant Impact (short-term construction-related impacts)	No Impact
<i>Hazardous Materials and Waste</i>	No Significant Impact	No Impact
<i>Health and Safety</i>	No Significant Impact	No Impact
<i>Infrastructure and Transportation</i>	No Significant Impact (short-term construction-related impacts)	No Impact
<i>Land Use</i>	Slight Positive Impact (utilization of formerly used site)	No Impact

Noise	No Significant Impact (short-term construction-related impacts)	No Impact
Socioeconomics	Slight Positive Impact (temporary construction-related employment)	No Impact
Water Resources	No Significant Impact (NPDES permit required)	No Impact

Alternative 1, The Preferred Alternative, is to construct a new TETF consisting of one 19,100 square foot academic building and an attached 10,800 square foot covered hardstand area to support outdoor training during inclement weather; it presents no significant impacts to environmental resources. No negative cumulative impacts occur under this alternative. Any impacts that might result can be mitigated. Alternative 2, The No Action Alternative, will result in no change and no impacts.

INADVERTENT DISCOVERIES

No Phase I archaeological survey, despite an intense effort and excellent research sampling strategy, precludes the possibility that an archaeological site may be discovered during subsequent construction or clearing activities. Federal cultural resource preservation statutes mandate that should artifacts become apparent during construction or clearing, such materials should be identified and evaluated by an archaeologist. Should human remains be encountered, Federal statutes specify that work shall cease immediately and the proper authorities be notified. (*Federal Register, Rules and Regulations*, Dec. 4, 1995, Vol. 60, No. 232:62161, §10.5).

MITIGATIVE MEASURES, LICENSES, AND PERMITS

The selected building contractor will obtain and comply with the NPDES construction permit from ADEM and all applicable Federal, state, and local laws and regulations.

Mitigative Measures:

- **Air--Fugitive dust:** During ground-disturbing, regular site-watering practices will be implemented as necessary.
- **Air--Vehicle emission:** Contractors will implement and follow construction BMPs and ensure that construction vehicles have standard vehicle emissions control devices.
- **Biology--Erosion:** Best Management Practices for erosion control, topsoil management, and revegetation will be practiced. Erosion control during construction activities will include using hay bales and silt fencing to prevent soil movement into drainage ditches or low-lying areas. The contractor will determine site-specific geotechnical conditions.

- **Biology--Trees:** Trees that do not interfere with construction activities and are at least five inches in diameter will be saved and incorporated into the proposed facility design to the maximum extent possible.
- **Ground Water:** Erosion control during the construction period will include the use of hay bales and silt fencing to prevent the movement of soils via surface waters and to mitigate the potential damage. Any concerns with run-off from parking lot(s) and roofs will be mitigated using methods deemed necessary and appropriate by ADEM and/or EPA.
- **Specific Health and Safety Plans:** Governing safety regulations with which the contractor will comply include: (1) AMCR 385-100, *Safety Manual*, and all appropriate OSHA regulations, including 29 CFR Part 1926, *Safety and Health Regulations for Construction* activities; EPA regulations (40 CFR), DOT regulations for transportation issues (49 CFR), the DoD and the Department of the Army program requirements established in AMCR 385-100. The selected building contractor will comply with all applicable Federal, state, and local laws and regulations.
- **Hazardous Materials/Waste:** Any hazardous materials/waste generated from construction will be identified, removed from the site, and disposed in accordance with current regulations.
- **Noise:** Noise-producing construction activities will be confined to normal working hours to minimize noise impacts.
- **Surface Water:** Contractor will comply with permit requirements that ADEM deems necessary to maintain the same run-off amount that existed prior to construction, as well as all applicable Federal, state, and local laws and regulations.
- **Infrastructure:** Interruptions to utility service or the roadway system outside the proposed construction areas will be scheduled in advance.

Permits:

- **Air:** Title V Air Permit (Permit #: 7090007) issued by ADEM to RSA on July 7, 2003. Allows RSA to regulate all emission sources under one permit.
- **Solid Waste:** The landfill has a permit from ADEM (No. 45-03) that is valid until October 8, 2006.
- **Wastewater Treatment:** Tetra Tech, Inc., central plant owner-operator, holds National Pollutant Discharge Elimination System Permit Number AL0000019.
- **Storm Water:** Contractor will obtain a NPDES storm water construction permit from ADEM.

APPENDIX A

REFERENCES

- Alexander, Lawrence S., H. Russell Campbell, Daniel J. Minnich and James M. Moore. *Phase I Archaeological Survey of Ground Disturbance Areas 4, 5, and 7 on Redstone Arsenal, Madison County, Alabama*. Alexander Archaeological Consultants, P.O. Box 62, Wildwood, Georgia. November 1998.
- Directorate of Environmental Management and Planning. *Real Property Master Plan, Land Use Analysis for Redstone Arsenal*, April, 1999.
- Geological Survey of Alabama. *Environmental Geology and Hydrology Huntsville and Madison County, Alabama*, Atlas Series 8, 1975.
- Russell, Zolna. "Rain Gardens: Stormwater Management Alternative," *Landscape Architecture*, July, 2000, p. 24.
- U.S. Army Corps of Engineers. *Wetlands Research Program Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual*, January 1987.
- U.S. Army Aviation and Missile Command. *Integrated Natural Resources Management Plan for Redstone Arsenal*, October, 2002.
- U.S. Army Missile Command. *Final Environmental Assessment for Redstone Arsenal Master Plan Implementation*, Redstone Arsenal, Alabama, December, 1994.
- U.S. Department of Agriculture. *Soil Survey of U.S. Army Redstone Arsenal, Madison County, Alabama*, 2002.
- U.S. Department of Defense. DoD Instruction 4715.9, *Environmental Planning and Analysis*, May 3, 1996.
- U.S. Department of the Army. U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, NJID, 300 1, December 31, 1971.
- Army Materiel Command Regulation (AMCR) 385-100, *Safety Manual*, August, 1985.
- Regulation 200-2, *Environmental Analysis of Army Actions*, March 29, 2002.

APPENDIX B

PREPARERS OF AND INDIVIDUALS AND AGENCIES CONTRIBUTING TO THE ENVIRONMENTAL ASSESSMENT

LIST OF PREPARERS AND CONTRIBUTORS

Larry W. Blackwell Director, Environmental Programs, SpecPro, Inc.
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Michael J. Landers, Senior Environmental Scientist, SpecPro, Inc.
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INDIVIDUALS/AGENCIES CONSULTED

Individuals/Agencies Contributing to the EA

U.S. ARMY GARRISON – REDSTONE ARSENAL: DIRECTORATE OF ENVIRONMENTAL SAFETY (DES)

IC	Installation Compliance
IR	Installation Restoration
NR	Natural Resources

Beverly Curry. Staff Archaeologist, NR
Daniel J. Dunn. Division Chief, NR
Gabrielle Ehinger. Ecologist, NR.
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Bryan Phillips. NEPA Contractor Support, IR
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Mike Wassell. Chemist, IC

Carolene Wu. Environmental Protection Specialist, NR
DIRECTORATE OF PUBLIC WORKS (DPW)
Kevin Burleson, Engineer
Bobby Noles. Traffic Management Office, DPW
U.S. ARMY ORDNANCE MUNITIONS AND ELECTRONICS MAINTENANCE SCHOOL (OMMS)
Jim Durham
Capt. Talli Sosa
Major Adam Brink

HUNTSVILLE, ALABAMA ORGANIZATIONS CONSULTED

Gloria Mims, Huntsville Natural Resources
Ogden Martin, Ogden Martin Waste to Energy Facility

AGENCIES/ORGANIZATIONS SENT COPIES OF THE ASSESSMENT

To meet CEQ Regulations of NEPA, U.S. Army is circulating this EA to:

U.S. Army Garrison-Redstone, DES, Natural Resources, Redstone Arsenal, Alabama.
U.S. Army Garrison-Redstone, DPW, Master Planning Division, Redstone Arsenal, Alabama.
U.S. Environmental Protection Agency, Region IV, Office of Environmental Assessment, Atlanta, Georgia.
U.S. Fish and Wildlife Service, Ecological Services Division, Daphne, Alabama.

APPENDIX C

CONTROL OPTIONS FOR GENERAL CONSTRUCTION OPEN SOURCES OF PM-10

**Control Options for General Construction
Open Sources of PM-10**

Emission Source	Recommended Control Method(s)
Debris handling	Wind speed reduction Wet suppression ^a
Truck transport ^b	Wet suppression Paving Chemical stabilization ^c
Bulldozers	Wet suppression ^d
Pan scrapers	Wet suppression of travel routes
Cut/fill material handling	Wind speed reduction Wet suppression
Cut/fill haulage	Wet suppression Paving Chemical stabilization
General construction	Wind speed reduction Wet suppression Early paving of permanent roads

Source: "Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources," AP-42, Fifth Edition, January 1995. Office of Air Quality Planning and Standards, Office of Air and Radiation, U.S. Environmental Protection Agency.

^a Dust control plans should contain precautions against watering programs that confound trackout problems.

^b Loads should be covered to avoid loss of material in transport, especially if material is transported offsite.

^c Chemical stabilization is usually cost-effective for relatively long-term or semi-permanent unpaved roads.

^d Excavated materials may already be moist and not require additional wetting. Furthermore, most soils are associated with an "optimum moisture" for compaction.

APPENDIX D
CRITERIA, THRESHOLDS, AND METHODS
FOR IMPACT ASSESSMENT

Subject Area/ Resource Category	Criteria	Threshold	Method
EPA or State of Alabama appropriate methods	Air quality exceedance	Emits pollutants above air emission limits established in Redstone Arsenal's permit; contributes substantially to an existing or projected air quality violation; or exposes sensitive receptors to substantial pollutant concentrations	
<i>Biological Resources</i> <ul style="list-style-type: none"> • Flora and Fauna • Threatened and Endangered Species 	Ecosystem integrity Federal- and state-listed threatened or endangered species or species proposed for Federal or state listing as threatened or endangered; nesting birds protected by the Migratory Bird Treaty Act	Causes alteration of more than 10% of a "natural community" to a nonnatural status; reduces a wildlife population to below self-sustaining levels; or introduces or increases prevalence of noxious weeds or new exotic species. Causes mortality, critical habitat loss, or lowered reproductive success (Endangered Species Act) or causes direct impacts or disturbance to nesting birds protected by the Migratory Bird Treaty Act	Professional standards/best professional judgment; biological monitoring Professional standards/best professional judgment (survey); record taking
<i>Cultural Resources</i>	Sites, structures, or objects listed or eligible for listing in the NRHP or National Landmarks	Effect or adverse effect as defined by the National Historic Preservation Act (1966, as amended)	Professional standards/best professional judgment
<i>Geology and Soils</i>	Soil loss due to erosion	Does not affect prime farmland	professional standards/best professional judgment

<i>Hazardous Materials and Waste</i>	Compliance with regulatory guidelines	Hazardous materials or waste not handled/disposed appropriately	DOT, EPA, and OSHA regulations
<i>Health and Safety</i>	Compliance with OSHA, EPA, and DOT regulations	Activities that affect the well-being, safety, or health of workers or members of the public	29 CFR (OSHA), 40 CFR (EPA), 49 CFR (DOT) and AR 385-100
<i>Infrastructure and Transportation</i>	Infrastructure or transportation change	Results in a substantial alteration of the present infrastructure or transportation	Professional standards/best professional judgment
<i>Land Use</i>	Land use change	Results in a substantial alteration of the present or planned land use of Redstone Arsenal or increases visual contrast beyond the visual resource measure class objective for the location	Professional standards/best professional judgment; visual quality analysis ¹
<i>Noise</i>	Noise-generating activities	65 dBA for compatible land uses; less than 65 dBA Ldn for residential and other noise-sensitive land uses	RSA ICUZ Program; City of Huntsville Noise Ordinance 88-663
<i>Socioeconomics</i>	Population growth, income levels, unemployment, and environmental justice	Causes more than 10% change in population levels over historic baseline; increase unemployment by more than local projections; causes per capita income to drop below poverty level; or causes adverse environmental, economic, social, or health impacts to be disproportionately placed on minority or low-income populations (E.O. 12898)	Socioeconomic analysis and human health and environmental analysis.

<i>Water Resources</i> <ul style="list-style-type: none"> • Surface and Groundwater • Wetlands 	Water quality Violates Clean Water Act Section 404 or Rivers and Harbors Act of 1899; or violates permit conditions or mitigation requirements for previously authorized activities	Exceeds or violates Alabama water quality standards or objectives, including National Pollutant Discharge Elimination System permitted outfalls Unauthorized activities occurring within jurisdictional waters of the United States; failure to meet specific permit conditions or mitigation requirements	EPA or State of Alabama approved methods Best professional judgment or enforcement action by the U.S. Army Corps of Engineers
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APPENDIX E CLEAN AIR STANDARDS

NAAQS and Alabama Ambient Air Quality Standards

Pollutants	Averaging Period	Primary Ambient Air Quality Standards	Secondary Standard
Sulfur Dioxide	3-hour Average 24-hour Average Annual Arithmetic Mean	--- 0.14 ppm (365 µg/m ³) 0.03 ppm (80 µg/m ³)	0.5 ppm (1300 µg/m ³) --- ---
Particulates < 2.5 µm (PM 2.5)	24-hour Average* Annual Arithmetic Mean*	65 µg/m ³ 15 µg/m ³	65 µg/m ³ 15 µg/m ³
Particulates < 10 µm (PM 10)	24-hour Average Annual Arithmetic Mean	150 µg/m ³ 50 µg/m ³	150 µg/m ³ 50 µg/m ³
Carbon Monoxide	1-hour Average 8-hour Average	35 ppm (40 mg/m ³) 9 ppm (10 mg/ m ³)	--- ---
Ozone	1 hour 8 hour*	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)	0.12 ppm (235 µg/m ³) 0.08 ppm (157 µg/m ³)
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	0.53 ppm (100 µg/m ³)
Lead	Quarterly Average	1.5 µg/m ³	1.5 µg/m ³

Note: µm = micrometers, µg/m³ = micrograms per cubic meter, and ppm = parts per million

 Parenthetical value is an approximate equivalent concentration.

*The ozone 8-hour standard and the PM 2.5 standards are included for information only. A 1999 Federal court ruling blocked implementation of these standards, which EPA proposed in 1997. EPA has asked the U.S. Supreme Court to reconsider that decision.

APPENDIX F

CONDITIONS NORMALLY REQUIRING AN ENVIRONMENTAL IMPACT STATEMENT

The potential impacts arising from the proposed TETF construction were evaluated specifically in the context of the criteria for actions requiring an Environmental Impact Statement described in DoD Directive 4715.9, *Environmental Planning and Analysis* (U.S. Department of Defense, 1996), and AR 200-2, *Environmental Analysis of Army Actions* (U.S. Department of the Army, 2002). Specifically, the proposed project activities were evaluated for their potential to:

- significantly affect environmental quality or public health and safety; significantly affect historic or archaeological resources, public parks and recreation areas, wildlife refuge or wilderness areas, wild and scenic rivers, or aquifers;
- establish a precedent for future actions;
- adversely affect properties listed or meeting the criteria for listing on the National Register or the National Registry of Natural Landmarks;
- significantly affect prime and unique farmlands, wetlands, ecologically or culturally important areas, or other areas of unique or critical environmental concern;
- result in significant and uncertain environmental effects or unique or unknown environmental risks;
- significantly affect a species or habitat listed or proposed for listing on the Federal list of endangered or threatened species;
- adversely interact with other actions resulting in cumulative environmental effects; and
- involve the use, transportation, storage, and disposal of hazardous or toxic materials that may have significant environmental impact.

APPENDIX G
ALABAMA STATE HISTORIC PRESERVATION OFFICE
LETTER OF CONCURRENCE



F. LAWRENCE OAKS
EXECUTIVE DIRECTOR

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 South Perry Street
MONTGOMERY, ALABAMA 36130-0900



TELEPHONE NUMBER
334-242-3184
FAX: 334-240-3477

December 21, 1998

Bev Curry
U.S. Army Aviation and Missile Command
Directorate of Environmental Management and Planning
Redstone Arsenal, Alabama 35898

Re: AHC 99-0223
Draft Cultural Resource Assessment
Ground Disturbance Areas 4, 5, & 7
Redstone Arsenal
Madison County, Alabama

Dear Ms. Curry:

Upon review of the cultural resource assessment conducted by Alexander Archaeological Consultants, the Alabama Historical Commission has determined that we agree with the author's findings that one archaeological site is not eligible for the National Register and forty-four archaeological sites are potentially eligible for the National Register. We also agree with the author's recommendations that the forty-four sites which are potentially eligible for the National Register should be avoided. If avoidance is not feasible, Phase II proposals should be developed and submitted to our office for approval prior to implementation.

We appreciate your efforts on this project. Should you have any questions or comments, please contact Stacye Hathorn or Greg Rhinehart of our office and include the AHC tracking number referenced above.

Sincerely,

Thomas O. Maher, Ph.D.
State Archaeologist

for: Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/TOM/SGH/GCR

The State Historic Preservation Office
<http://preserveala.org>

APPENDIX H PUBLIC NOTICE

The Huntsville Times, Sunday, March 7, 2004 E9

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Legals

FINDING OF NO SIGNIFICANT IMPACT (FNSI) ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF THE ORDNANCE MUNITIONS AND ELECTRONIC MAINTENANCE SCHOOL (OMEMS) TECHNICAL ESCORT TRAINING FACILITY (TETF) AT REDSTONE ARSENAL, ALABAMA

BACKGROUND: This Environmental Assessment (EA) addresses the potential environmental impacts associated with the Proposed Action to construct a Technical Escort Training Facility (TETF) for training conducted by the U.S. Army Ordnance Munitions and Electronic Maintenance School (OMEMS) at Redstone Arsenal, Alabama. This facility will provide training to U.S. military, Department of Defense (DoD) civilians, and international students involving field sampling, detection, identification, limited decontamination, and mitigation/ remediation of hazards associated with chemical, biological, and radiological materials and Weapons of Mass Destruction (WMD).

DESCRIPTION OF ALTERNATIVES CONSIDERED FOR THE PROPOSED ACTION

ALTERNATIVE 1 (Preferred Alternative) - New Facility Construction: Alternative 1 includes the construction of a new TETF consisting of one 19,100 square foot academic building with three classroom/laboratory combinations, three dress-out rooms, personnel workspace, hygiene areas, break area, storage areas, and an attached 10,800 square foot covered handstand area to support outdoor training during inclement weather. A gravel roadway will connect the rear of the proposed training facility to the adjacent training area allowing students and instructors direct access for class demonstrations and practical exercises. Supporting facilities include utilities: electric service, paved walks, curbs and gutters, security fencing and lighting, storm drainage, information systems, and general site improvement. The proposed construction site is at the corner of Kingfisher Road and Cajun Drive across Cajun Drive from Building 3534.

ALTERNATIVE 2 (No-Action Alternative): Under Alternative 2 the Army would not construct a new TETF. Current facilities include one older (1975) Installation Status Report condition coded RED metal building and one new metal building. These buildings will meet the immediate training increases up to a maximum of 480 students a year, but will not meet the anticipated training requirements beyond FY 08. Under the No Action Alternative, if the construction project were not completed, the ability to perform adequate technical escort training would be impaired. Military readiness and the availability of technical experts in the chemical mediation WMD field would be hampered without this capability.

ENVIRONMENTAL EFFECTS: Eleven broad environmental components or resources were considered to provide a

context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the significance of potential impacts. The areas of environmental consideration are air quality, biological resources, cultural resources, hazardous materials and waste, health and safety, infrastructure and transportation, land use, noise, geology and soils, socioeconomic, and water resources. Cumulative impacts of the Proposed Action were also analyzed.

Minimization measures are not required for land use and socioeconomic as no, or slightly positive, impacts were identified for the alternatives considered for these resources. Impacts to the other environmental resources examined were determined to be not significant and anticipated impacts are mitigable. No significant cumulative impacts were identified under the alternatives.

CONCLUSION: The Directorate of Environment and Safety (DES) has prepared an EA that addresses the Proposed Action and evaluates the environmental impacts of the alternatives considered. Based on the EA for the Construction of the OMEMS TETF at Redstone Arsenal, Alabama, March 2004, there would be no significant environmental impacts associated with this project that would require the preparation of an Environmental Impact Statement.

Should you wish to review the proponent's Environmental Assessment for the Construction of the OMEMS TETF at Redstone Arsenal, Alabama, or comment on this action, you may contact Ms. Pam Rogers, 256-876-4162, Commander, U.S. Army Garrison-Redstone, ATTN: AMSAM-IN (Ms. Pam Rogers), Redstone Arsenal, Alabama, 35898-5020, within thirty days from the date of this publication.

DEPARTMENT OF THE ARMY
UNITED STATES ARMY
GARRISON REDSTONE ARSENAL, ALABAMA

FINDING OF NO SIGNIFICANT IMPACT (FNSI) FOR THE CONSTRUCTION OF THE ORDNANCE MUNITIONS AND ELECTRONIC MAINTENANCE SCHOOL (OMEMS) TECHNICAL ESCORT TRAINING FACILITY (TETF) AT REDSTONE ARSENAL, ALABAMA
March 7, 2004

APPENDIX I
LETTERS OF CONSULTATION